

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: WO 99/57981 (11) International Publication Number: A1 A01N 37/18 (43) International Publication Date: 18 November 1999 (18.11.99) (81) Designated States: CA, JP, US, European patent (AT, BE, CH, (21) International Application Number: PCT/US99/10065 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, 7 May 1999 (07.05.99) (22) International Filing Date: Published (30) Priority Data: With international search report. 8 May 1998 (08.05.98) US 60/084,870 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. (71) Applicant (for all designated States except SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH [US/US]; 1275 York Avenue, New York, NY 10021 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): AGUS, David, B. [US/US]; 9 Pierrepont Street, Brooklyn, NY 11201 (US). SCHEINBERG, David [US/US]; 325 Central Park West, New York, NY 10025 (US). ROBERTS, Wendy [US/US]; 1233 York Avenue, New York, NY 10021 (US). ZELENETZ, Andrew, D. [US/US]; 31 Mohegan Road, Larchmont, NY 10538 (US). (74) Agent: LARSON, Marina, T.; Oppedahl & Larson LLP, P.O. Box 5270, Frisco, CO 80443 (US).

(54) Title: COMPOSITIONS AND METHODS FOR ACTIVE VACCINATION

(57) Abstract

Non-Hodgkin's lymphoma (NHL) is treated, not by administration of an anti-CD20 monoclonal antibody, but by the administration of CD20 itself, or an immunogenic fragment of the extracellular portion thereof, coupled to or administered with an antigenic carrier moiety such as keyhole limpet hemocyanin (KLH). This results in the stimulation of the production of polyclonal antibodies against CD20 (or an immunogenic fragment thereof) which has the effect of reducing the number of B-cells, including malignant B-cells, and thus provides an active vaccine. The same approach can be used for therapeutics for other diseases and conditions in which target cells possess a transmembrane protein, and is particularly applicable to those diseases and conditions for which administration of antibodies to transmembrane proteins or peptides (i.e., passive therapy) have been shown to provide therapeutic benefits, and especially in the situations where the target is also capable of transducing or receiving a signal important for cell growth or function. This would include, for example, Her2/neu, VEGF receptor, epidermal growth factor receptor, the CD19 molecule, interleukin-2-receptor, interleukin-4-receptor, and the P-glycoprotein, also known as the multidrug-resistance protein.